

## **Remarks**

### **I. Introduction**

This is in response to the Office Action dated May 24, 2007. The Office Action rejected claims 1, 2, 5, 7-8, 11, 13, 19, 22, 25, 29, 30, 38, 40, and 41 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,993,459 ("Carrick"). The Office Action rejected claims 6 and 26 under 35 U.S.C. § 103(a) as being unpatentable over Carrick in view of U.S. Patent No. 6,891,866 ("Robinson"). The Office Action objected to claims 3-4, 9-10, 12, 20-21, 23-24, 27, 31-32 and 39 as being dependent upon a rejected base claim. The Office Action indicated that claims 3-4, 9-10, 12, 20-21, 23-24, 27, 31-32 and 39 would be allowable if rewritten in independent format including all of the limitations of the base claim and any intervening claims. Applicants appreciate the recognition of allowable subject matter. Claims 1-32 and 38-41 remain for consideration.

### **II. Rejection - 35 U.S.C. § 102(e)**

Claims 1, 2, 5, 7-8, 11, 13, 19, 22, 25, 29, 30, 38, 40, and 41 were rejected under 35 U.S.C. § 102(e) as being anticipated by Carrick. Applicants respectfully traverse this rejection.

First, Applicants respectfully disagree with the Examiner's statement "the optical midpoint power level has not been defined in the claims, leaving the interpretation open to a broad degree" (Office Action, Page 3, Paragraph 1). Applicants specifically claim "said predetermined optical midpoint power level determined by calculating an arithmetic mean of a plurality of optical power levels" in independent claim 1, "determining a measured optical midpoint power level as an arithmetic mean of the detected first optical power level and the detected second optical power level" in independent claim 22, "determining a measured optical midpoint power level as an arithmetic mean of the first photodetector current indicator and the second photodetector current indicator" in independent claim 38, and "the predetermined optical midpoint power level being determined by calculating an average power level from a plurality of optical power levels" in independent claim 40. As is shown here, each independent

claim clearly defines the optical midpoint power level as "an arithmetic mean" of a plurality of power levels. Given the clear claim language and the definitional support in Applicant's Specification at least at Paragraph [0032], Applicants submit that the Office cannot make up a new definition and then apply it to the pending claims. Therefore, the "interpretation that the optical midpoint power level is the power level obtained when the corrective control signal is applied to the laser for extinction ratio adjustment" is erroneous and, since the entire § 102 rejection is based on this incorrect "interpretation", the rejection is improper and should be withdrawn.

Further, Applicants respectfully submit Carrick does not teach or suggest all claim features of Applicants' invention.

Specifically, in independent claim 1 Applicants claim "the integrated circuit comprising:... an optical midpoint controller" among other things. Independent claim 40 recites similar features.

The current Office Action points to the computer 32 of Carrick to show the optical midpoint controller (which is part of an integrated circuit in Applicants' invention). However, Carrick's computer "includes at least a Central Processing Unit (CPU), a memory, and an input/output device" (Carrick, Col. 4, lines 48-50). It is clear that the computer of Carrick cannot be "an optical midpoint controller" on an "integrated circuit" as claimed in Applicants' independent claim 1 and independent claim 40.

Therefore, as Carrick does not and cannot teach or show all of the limitations of Applicants' invention as claimed in independent claims 1 and 40, Carrick does not anticipate the Applicants' invention. In view of this, Applicants respectfully request the Examiner reconsider and withdraw these rejections.

Still further, Applicants' recite in independent claim 22, among other things, "modulating the semiconductor laser at a first modulation level when the input data signal has a first logical state and modulating the semiconductor laser at a second modulation level when the input data signal has a second logical state." Independent claim 38 recites similar features, as does dependent claim 2.

The current Office Action points to Carrick's FIG. 2 and element 6 (a laser driver) of Carrick's FIG. 3 to show this feature in the rejection of dependent claim

2. The rejections of independent claims 22 and 38 then refer back to this rejection. However, Carrick does not show a first modulation level and a second modulation level here or anywhere else in the reference. Carrick, in discussing the laser driver 6 (which the current Office Action refers to as the modulator), states "laser driver 6 outputs at an output 10 an output signal suitable for modulating a laser's light output" (Carrick, Col. 4, lines 1-2, emphasis added). Applicants note that "an" is singular. Neither here nor in any other section does Carrick refer to multiple modulation signals. Even if this section of Carrick is construed to mean *any* output signal, Carrick makes no reference to having "a first modulation level when the input data signal has a first logical state" and having "a second modulation level when the input data signal has a second logical state" as claimed in Applicants' independent claim 22 and similarly in independent claim 38 and dependent claim 2. That is, there is no indication in Carrick to base the modulation levels on the input data signals at differing logical states.

Therefore, as Carrick does not teach or show all of the limitations of Applicants' invention as claimed in independent claims 22 and 38 and dependent claim 2, Carrick does not anticipate the Applicants' invention. In view of this, Applicants respectfully request the Examiner reconsider and withdraw the rejections of these claims.

With further regard to independent claim 38, Applicants claim, among other things, "having a first optical power level in response to a first modulation current level and having a second optical power level in response to a second modulation current level" (emphasis added). Dependent claim 2 recites similar features.

As discussed above, the current Office Action points to Carrick's FIG. 2 and element 6 (a laser driver) of Carrick's FIG. 3 to show this feature in the rejection of dependent claim 2 and then refers back to this rejection for independent claim 38. However, FIG. 2, which the current Office Action refers to as showing "a first modulation current level (fig.2 one)" (Office Action, Page 4, line 2) actually shows "power levels of A1 and A2 are plotted versus time"

(Carrick, Col. 3, lines 22-23, emphasis added). These power levels are *not* current levels as claimed in Applicants' claims 2 and 38.

Therefore, as Carrick does not teach or show all of the limitations of Applicants' invention as claimed in independent claim 38 and dependent claim 2, Carrick does not anticipate the Applicants' invention. In view of this, Applicants respectfully request the Examiner reconsider and withdraw the rejections of these claims.

Also, with regard to independent claims 1, 22, 38, and 40, Applicants respectfully submit the current Office Action mistakenly points to sections of Carrick, purporting to show certain features of Applicants' claims. However, these sections of Carrick do not disclose what is actually claimed by Applicants.

Specifically, Applicants claim in independent claim 1:

an optical midpoint controller couplable to the photodetector and couplable to the semiconductor laser, the optical midpoint controller, in response to the photodetector current, adjusting a forward bias current of the semiconductor laser, so that the semiconductor laser generates the optical signal with a power level approximate to a predetermined optical midpoint power level, said predetermined optical midpoint power level determined by calculating an arithmetic mean of a plurality of optical power levels.  
(emphasis added)

Similar features are present in independent claims 22, 38, and 40. Specifically, claim 22 claims, in part:

adjusting the forward bias current of the semiconductor laser to generate the optical signal having substantially the predetermined optical midpoint power level;

claim 38 claims, in part:

adjusting the forward bias current of the semiconductor laser to generate the optical signal having substantially the predetermined optical midpoint power level;

and claim 40 claims, in part:

the semiconductor laser generates the optical signal having a power level approximate to a predetermined optical midpoint power level.

Accordingly, independent claims 1, 22, 38, and 40 each claim-generating an optical signal with a power level approximate to a predetermined optical midpoint power level.

Applicants respectfully submit that the current Office Action confuses Applicants' claimed "optical midpoint power level" with "extinction ratio." While these two concepts are joined, they are not the same.

In the rejection of claim 1, the current Office Action refers to Carrick, Col. 4, lines 40-45 to show this claim feature. However, this section of Carrick clearly states "the extinction ratio can be calculated" (emphasis added) and "the processor can generate the extinction control signal on line 34 which is applied to the extinction control input 8 of laser driver 6 for controlling the extinction ratio" (emphasis added). Carrick defines "extinction ratio" at least in Col. 3, lines 39-42 as a ratio of power levels. Therefore, this ratio of power levels is unitless, is not a power level, is not "predetermined", and cannot be "a power level approximate to a predetermined optical midpoint power level" where the optical midpoint power level is defined "by calculating an arithmetic mean of a plurality of optical power levels" as recited in independent claim 1 and similarly in independent claims 22, 38, and 40.

The current Office Action broadly states that the same rejections hold for independent claim 40. Accordingly, the rejection of independent claim 40 is similarly flawed.

The rejection of independent claims 22 and 38 refers to the rejection of dependent claim 5 to show that Carrick discloses the features quoted above. However, dependent claim 5 does not recite these features, so the current Office Actions does not show where Carrick supposedly discloses these features.

Dependent claim 5 recites, among other things, "determining a variance between the measured optical midpoint power level and the predetermined optical midpoint power level and, based on the variance, forming an optical midpoint error signal", but not "adjusting the forward bias current of the semiconductor laser to generate the optical signal having substantially the predetermined optical midpoint power level" as recited in independent claims 22 and 38.

Applicant respectfully submits that the rejections of independent claims 22 and 38 are improper because neither the rejection nor Carrick addresses each of the limitations of these claims. Applicants find no reference in the current Office Action nor in Carrick that teaches or suggests these claim limitations. Accordingly, Applicants request the Examiner reconsider and withdraw these rejections.

For the foregoing reasons, Carrick does not teach or suggest the claim features and limitations discussed above and claimed in independent claims 1, 22, 38, and 40. Thus, Carrick does not teach all elements of these claims and, as a result, claims 1, 22, 38, and 40 are allowable.

It follows that claims 2-13 and 19-21 (dependent upon claim 1); claims 23-32 (dependent upon claim 22); claim 39 (dependent upon claim 38); and claim 41 (dependent upon claim 40) are allowable at least for the reason that they are dependent upon an allowable base claim.

### **III. Rejection - 35 U.S.C. § 103(a)**


Claims 6 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carrick in view of Robinson. Applicants respectfully traverse this rejection.

Claim 6 depends from allowable claim 1 and allowable claim 26 depends from independent claim 22; accordingly, claims 6 and 26 inherit the features of independent claims 1 and 22, respectively. As discussed above with respect to the § 102 rejections, Carrick does not show each claim limitation of independent claims 1 and 22. The current Office Action concedes Robinson does not show all the limitations of these claims either. Therefore, Robinson does not cure the deficiencies of Carrick with respect to the limitations claimed in independent claims 1 and 22 and inherited by dependent claims 6 and 26. Carrick, neither alone nor in combination with Robinson discloses each and every limitation of claims 6 and 26. Accordingly, Applicants request the Examiner reconsider and withdraw these rejections.

**IV. Conclusion**

For the foregoing reasons, all pending claims are allowable over the cited art. Reconsideration and allowance of all claims is respectfully requested.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Donald E. Marshall", is written over a horizontal line.

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